

OND Rainfall Days Trend (2.5 mm/day) [1972–2021]

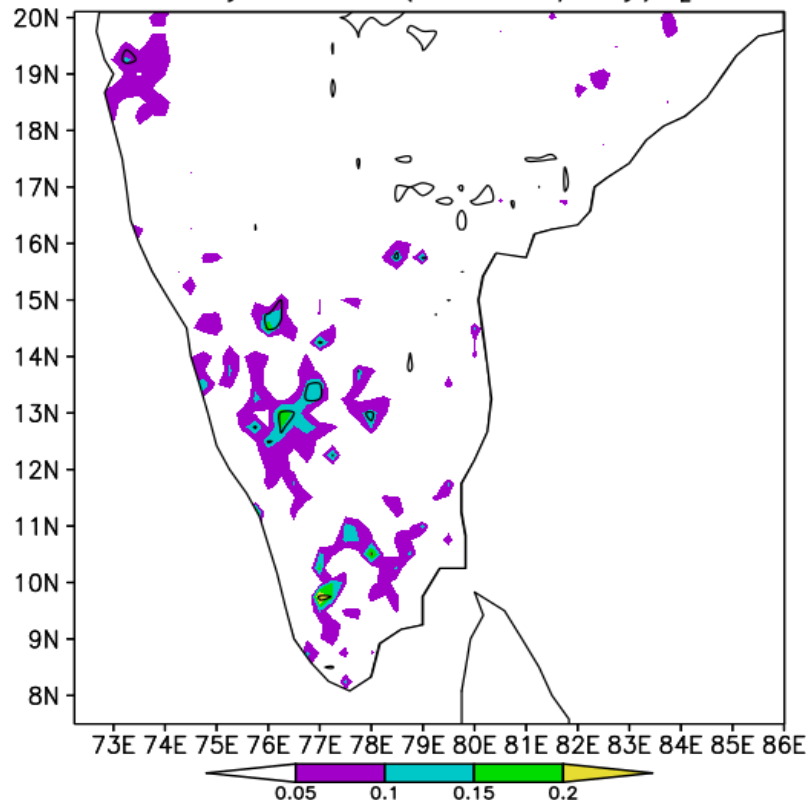


Fig. 3.5. Trend in rainfall days during October to December (1972-2021).

3.3. Heavy Rainfall events during the NE monsoon season

It is important to know the spatial pattern of climatology of heavy rainfall over the region. This will provide information on the climatological probability of heavy rainfall occurrence over the region during the season. The spatial pattern of heavy rainfall events was prepared using the IMD 0.25×0.25 degree daily rainfall data (Pai et al. (1972-2020)). It may be noted that the IMD's definition of heavy, very heavy and extreme heavy rainfall is based on rainfall station data. Since the analysis given below is based on the IMD's gridded data and somewhat smoothed data, IMD's definition cannot be strictly used for defining heavy, very heavy and extreme rainfall. However, even with the gridded data, we could get a reliable understanding of the spatial distribution of such heavy rainfall events.

Fig. 3.6 shows the spatial pattern of the number of days with heavy rainfall between 65 mm-124 mm. It suggests the maximum number of days with heavy rainfall is confined to the east coast of Tamil Nadu and the south coastal Andhra Pradesh, where on average we can expect more than 2 days of heavy rainfall. Another area of maximum heavy rainfall days is observed over south Kerala. Number of days with heavy rainfall sharply reduces towards the interior parts of the south Peninsula.

Fig. 3.7 shows the spatial distribution of frequency (number of days) of rainfall with 125 mm or more during the NE monsoon season. It suggests maximum frequency is found over the coastal parts of north Tamil Nadu and Andhra Pradesh. It suggests that these very heavy rainfall spells are associated with the landfall of tropical cyclones/depressions and lows along the east coast. On an average, we can expect about one day of such an event over this region during the NE monsoon season.

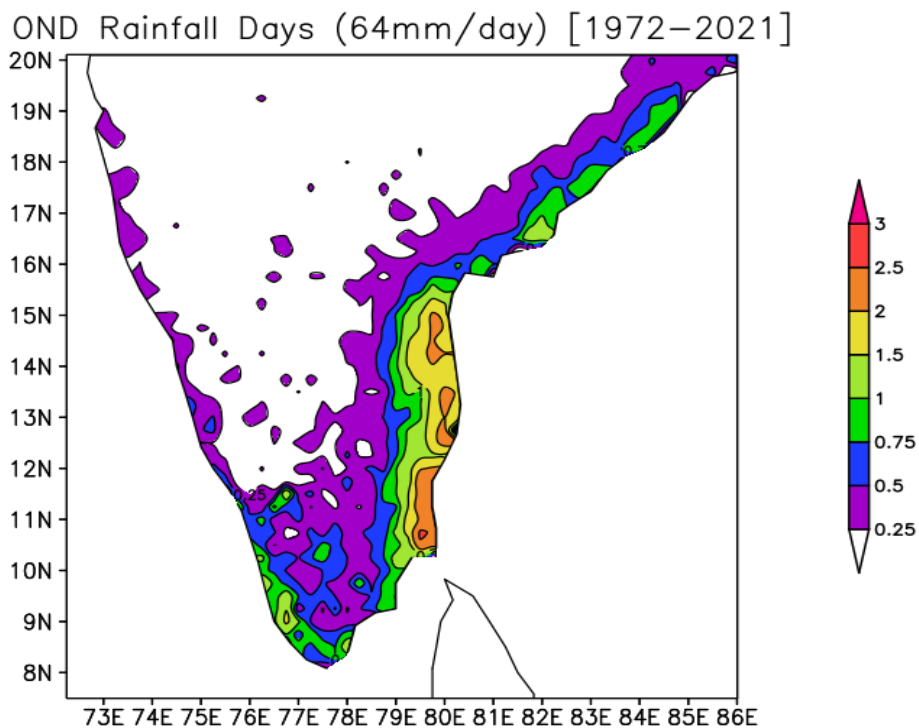


Fig. 3.6. Mean number of days during October-December with 65 mm-124mm. Period of the data 1972-2021.

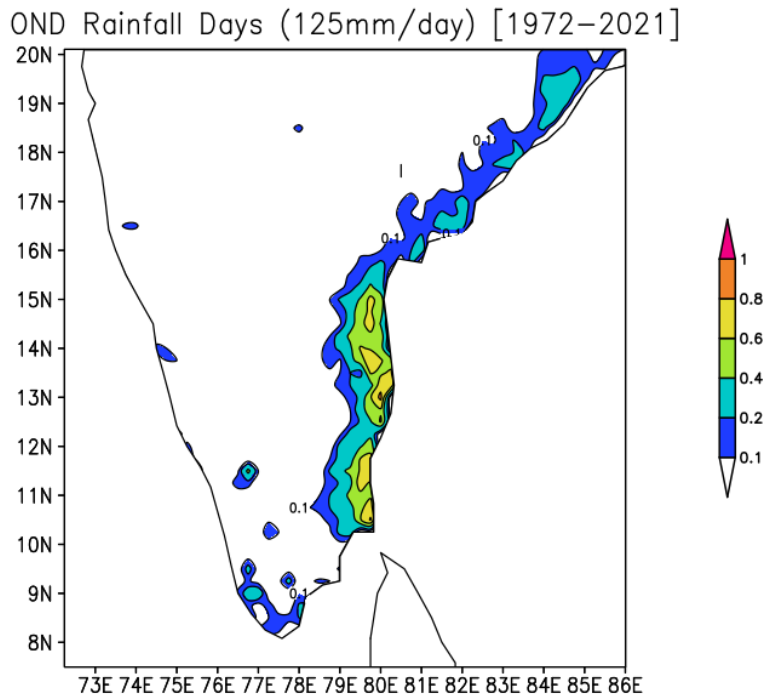


Fig. 3.7. Mean in rainfall days with more than 125 mm/day (Period: 1972-2021).

3.5. Maximum Probable frequency of heavy rainfall

Fig. 3.8 shows the maximum probable frequency of heavy rainfall (between 65 and 124 mm) during October to December calculated using data from 1951-2019. This map was taken from the IMD Climate Hazards and Vulnerability Atlas of India, 2022. A maximum probability of more than 7 days can be expected over the east-coast of Tamil Nadu and Southern parts of Kerala and Tamil Nadu. Over the interior parts of the south Peninsula, the maximum probability lies between 3-4 days.

Fig. 3.9 shows the maximum probable frequency of heavy, very heavy and extreme heavy rainfall (number of days) during the NE monsoon season (Oct-Dec). Over the east coast of north Tamil Nadu, South Coastal Andhra Pradesh and southern most districts of Tamil Nadu and Kerala, the maximum probable frequency is more than 15 days. Over other parts of coastal Pradesh, Tamil Nadu and south Kerala, the maximum probable frequency is between 10-14. Over interior parts of the south Peninsula, this number varies between 5-10 days.